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Attorney's Docket No. 35718/205458 (5718-100)

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re:	Johal *et al.*	Confirmation No.:	7883
Appl No.:	09/711,619	Group Art Unit:	1638
Filed:	November 13, 2000	Examiner:	D. Kruse
For:	SORGHUM DWARFING GENES AND METHODS OF USE		

February 19, 2002

Commissioner for Patents
Washington, DC 20231

RESPONSE TO RESTRICTION REQUIREMENT

This is in response to the Office Action dated December 19, 2001, in which the Examiner has required restriction between Group I, namely Claims 1-20, Group II, namely Claims 25-31, and Group III, namely Claim 32. Additionally, the Examiner has also indicated that, if Applicants elect the Group I claims, Applicants are required to also elect one nucleic acid sequence to be examined in conjunction with the elected group of claims.

Possibly due to inadvertence on the Examiner's part, claims 21-24 were not assigned to one of the three groups of claims that were described in the Office Action. On the basis of the Examiner's description of each of the three groups, Applicants believe that the Examiner intended to assign claims 21 to 24 to Group I for the following reasons. Claim 18 of Group I and claims 21-23 are drawn to a method for modifying the growth of an organism. Claims 21-23 depend from claim 18. Claim 24, which is drawn to a transformed plant cell, is analogous to claim 4 (Group I), which is drawn to a transformed plant.

Applicants hereby provisionally elect with traverse to prosecute the claims of Group I (Claims 1-24) and SEQ ID NO:7, and expressly reserve the right to file divisional applications or take such other appropriate measures deemed necessary to protect the subject matter of the remaining claims and sequences.

With respect to the election of one nucleic acid sequence to be examined in conjunction with the Group I claims, the Examiner has indicated that nucleotide sequences encoding different proteins are structurally distinct chemical compounds and are unrelated to one another and thus are deemed to normally constitute independent and distinct inventions within the meaning of 35 U.S.C. § 121. The Examiner also indicates that absent evidence to the contrary, each nucleotide is presumed to represent an independent and distinct invention, subject to a restriction requirement pursuant to 35 U.S.C. § 121 and 37 C.F.R. § 1.141.

Applicants' invention is drawn to the nucleotide sequences and amino acid sequences corresponding to the *Dw3* gene from sorghum. The invention includes, but is not limited to, nucleotide sequences from the an allele that encodes a functional gene product as demonstrated *in planta* by a wild-type phenotype (*Dw3*, SEQ ID NOS:3, 7, and 8 and nucleotide sequences encoding the polypeptide set forth in SEQ ID NO:9). The invention also encompasses nucleotide sequences of alleles that give rise to both stable (*dw3-ref*, SEQ ID NO:3) and unstable dwarf phenotypes (*dw3-1*, SEQ ID NO:2).

The nucleotide sequences of the invention are closely related to each other because these sequences correspond to nucleotide sequences of the sorghum *Dw3* locus. In particular, SEQ ID NO: 8 is the predicted cDNA of the *Dw3* gene that is set forth in SEQ ID NO: 7 as is indicated in

the specification at page 47, lines 20-22. The protein encoded by both SEQ ID NO:7 and SEQ ID NO:8 is set forth in SEQ ID NO: 9 (specification p. 47, lines 20-24). Additionally, SEQ ID NO:3 is a partial sequence of SEQ ID NO:7 (specification p. 44, lines 16-22) and as such is 100% identical at the nucleotide sequence level to the corresponding region of SEQ ID NO:7. Also closely related to SEQ ID NO:7 is SEQ ID NO: 1, which is a partial sequence of the *dw3-ref* allele (unstable dwarf) (specification p. 45, lines 11-21). SEQ ID NO:1 is 100% identical at the nucleotide sequence level to SEQ ID NO:7 but would not appear so from a cursory examination of an alignment of the two sequences because SEQ ID NO:1 contains a duplication that corresponds to nucleotides 5649-6530 of SEQ ID NO:7. Finally, SEQ ID NO:2 is also closely related to SEQ ID NO:7. SEQ ID NO:2 is the partial nucleotide sequence of the *dw3-1* allele, which is responsible for a stable dwarf phenotype in a sorghum plant when a plant is homozygous for this mutant allele (specification p. 45, lines 11-19). SEQ ID NOs:2 and 7 share 96.3% nucleotide sequence identity.

The Examiner is reminded that 37 C.F.R. § 1.142 requires that the inventions be "independent and distinct." According to MPEP 802.01, "independent" requires that there is no disclosed relationship between the two or more subjects disclosed. The relationship of SEQ ID NOs:1, 2, 3, 7, and 8 and nucleotide sequences encoding the polypeptide set forth in SEQ ID NO: 9 does not meet this standard. As described above, SEQ ID NOs:1, 2, 3, 7, and 8 and nucleotide sequences encoding the polypeptide set forth in SEQ ID NO: 9 are related both structurally and functionally because they represent nucleotide sequences corresponding to sorghum *Dw3* genes. Thus, while it is recognized that the nucleotide sequences of SEQ ID NOs:1, 2, 3, 7, and 8 and

nucleotide sequences encoding the polypeptide set forth in SEQ ID NO: 9 are patentably distinct, they are very related.

Further, MPEP 803 sets forth that "[i]f the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to independent or distinct inventions." Applicants submit that the search required to examine SEQ ID NOs: 1, 2, 3, 7, and 8 and nucleotide sequences encoding the polypeptide set forth in SEQ ID NO: 9 together would not be a serious burden because the sequences are homologous sorghum *Dw3* sequences. Due to the relatedness of SEQ ID NOs:1, 2, 3, 7, and 8 and nucleotide sequences encoding the polypeptide set forth in SEQ ID NO: 9, a search required to examine any one of these nucleotide sequences would likely produce the same result as would a search of any one of the remaining sequences. Accordingly, the examination of SEQ ID NOs:1, 2, 3, 7, and 8 and nucleotide sequences encoding the polypeptide set forth in SEQ ID NO: 9 together would not constitute a serious burden on the Examiner, when compared to the examination of SEQ ID NO:7 alone.

For these reasons, Applicants kindly request that the Examiner reconsider and examine together all the nucleotide sequences of the Group I claims, namely SEQ ID NOS: 1, 2, 3, 7, and 8, and nucleotide sequences encoding the polypeptide set forth in SEQ ID NO: 9. If, however, the Examiner is apt to maintain the position that SEQ ID NOs: 1, 2, 3, 7, and 8 and nucleotide sequences encoding the polypeptide set forth in SEQ ID NO: 9 are not sufficiently related to examine together, Applicants kindly request that the Examiner reconsider and examine the most closely related sequences together the nucleotide sequences of *Dw3*, namely SEQ ID NOS: 3, 7,

and 8 and nucleotide sequences encoding the polypeptide set forth in SEQ ID NO: 9, which is the polypeptide encoded by SEQ ID NOS:7 and 8.

At the very least, the Examiner is kindly requested to reconsider and examine together the nucleotide sequence corresponding to the *Dw3* gene, the nucleotide sequence corresponding to the cDNA of the *Dw3* gene, and nucleotide sequences encoding the polypeptide that is encoded by the *Dw3* gene, namely SED ID NOS:7 and 8, and nucleotide sequences encoding the polypeptide set forth in SEQ ID NO:9, respectively. These nucleotide sequences are closely related because each of these sequences encodes the same gene product, the polypeptide of SEQ ID NO:9. Therefore, it would be unreasonable for the Examiner not to examine SEQ ID NOs:7 and 8, and the nucleotide sequences encoding SEQ ID NO:9 together.

Should the Examiner have further questions or comments with respect to examination of this case, it is respectfully requested that the Examiner telephone the undersigned so that further examination of this application can be expedited.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those, which may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required

therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal service with sufficient postage as first class mail, in an envelope addressed to the Commissioner for Patents, Washington, DC 20231 on February 19, 2002.

Polly P. Burton

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